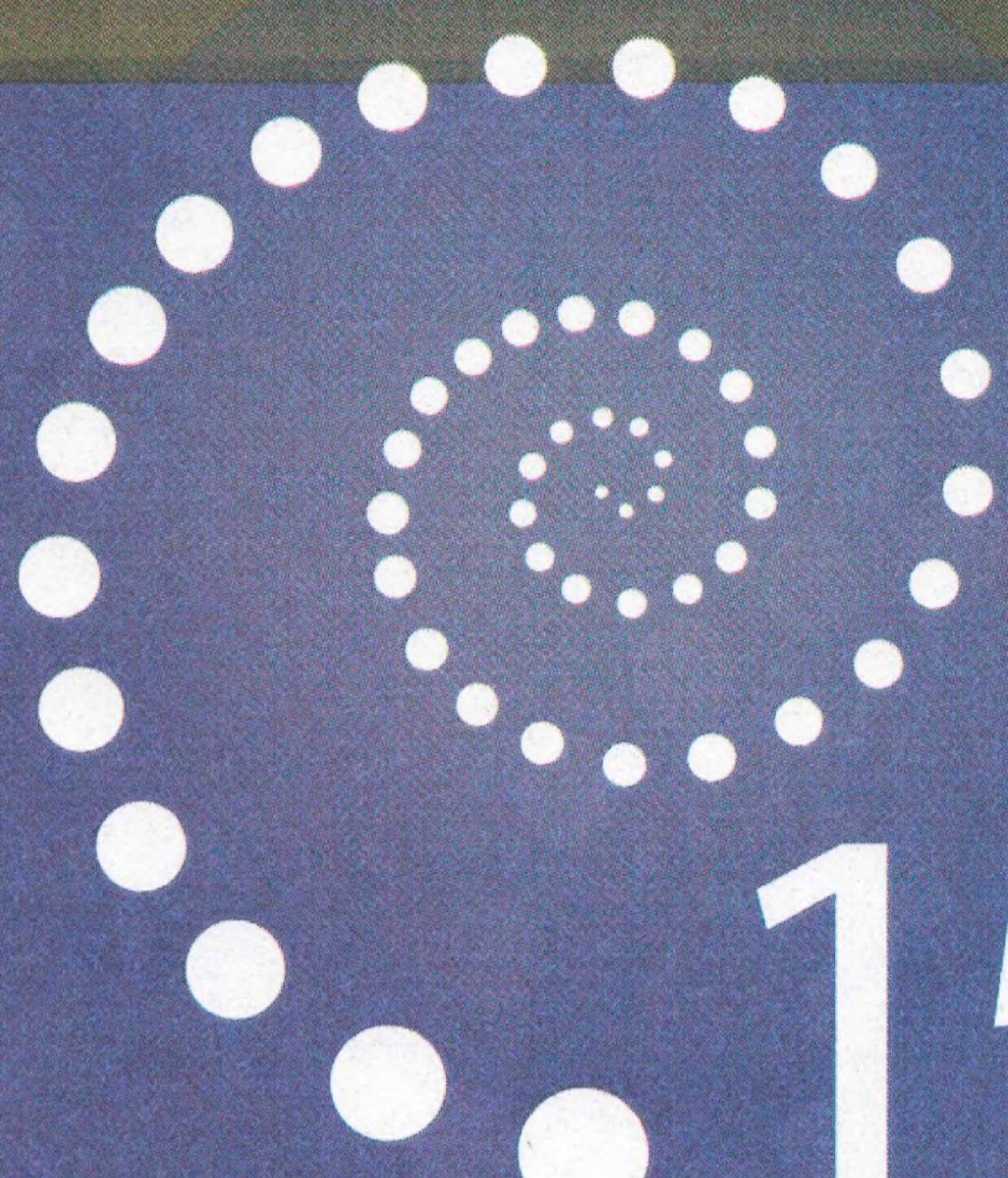


Academy

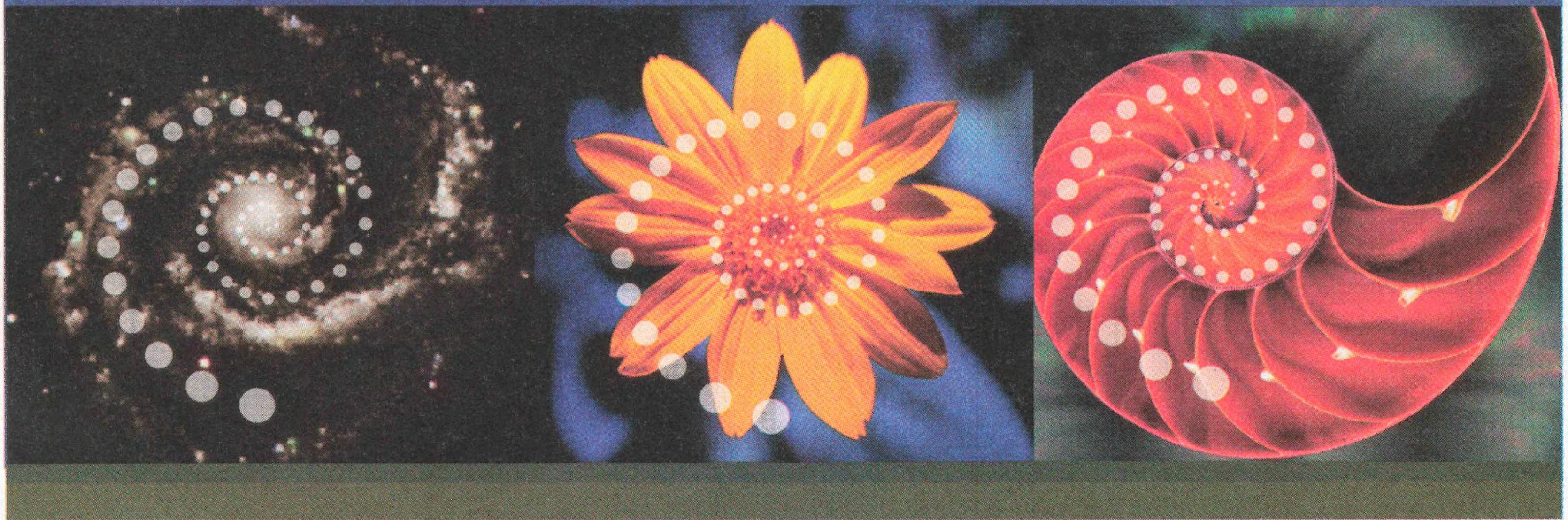
California Academy of Sciences' Member Newsletter

February/March 2003

\$1

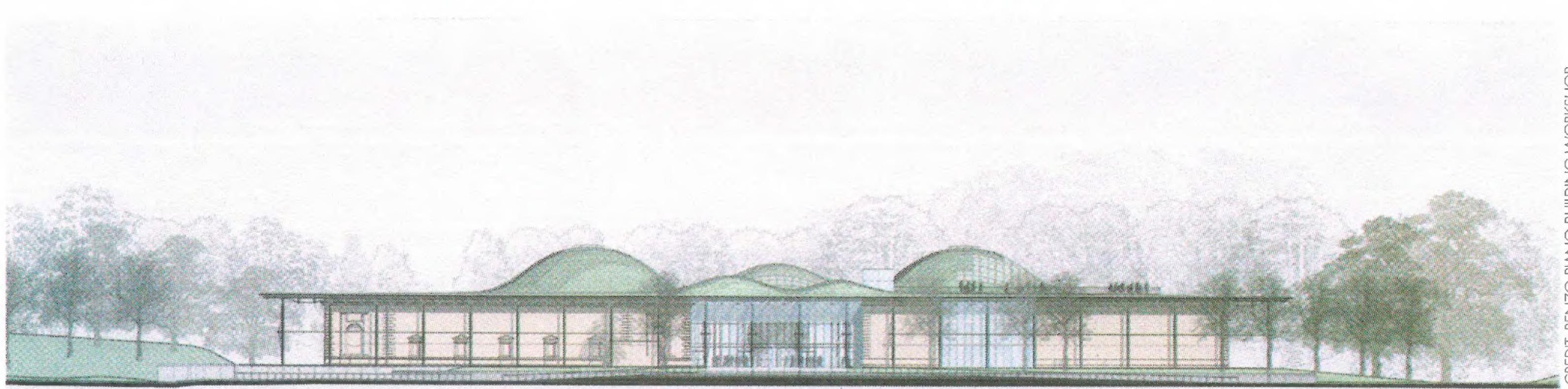


150
ANNIVERSARY
CELEBRATION



Message to Members

Looking Back, Looking Forward



CREDIT: RENZO PIANO BUILDING WORKSHOP

Front view of the future Academy in Golden Gate Park. The undulating roof will be planted with a variety of native plant species.

In 1853 when a group of seven enthusiastic amateur naturalists came together in a backroom off Montgomery Street to form the California Academy of Natural Sciences, little could they have realized the size and importance of the institution that would result. Today, as we celebrate the 150th anniversary of our founding, the Academy holds one of the largest collections of species of fauna and flora in the world and ranks among the leading research museums.

An exhibit celebrating that progress and our achievements opens here on March 1.

Exploring Nature's Wonders traces our rich, and at times, tumultuous history and follows the adventures of Academy scientists as they travel to the ends of the globe in search of unknown species to identify, describe, and place in the overall phylogeny of life. Treasures from the Academy's collection of 18 million species will be on view, historical tributes will be paid to

those who have shaped the institution for a century and a half, and plans for the future Academy in Golden Gate Park will be displayed.

But with so much else going on here, it has been hard to focus my full attention on our 150th anniversary celebration. After conducting an extensive search throughout San Francisco for a temporary home during our reconstruction, we have concluded our search—a decision especially important to you—our members and most loyal supporters. Sometime towards the end of 2003, we will move the Academy—exhibits, fish, our collection of 18 million specimens, and staff—to 875 Howard Street near Yerba Buena Gardens in downtown San Francisco. This site, a six-story building located near several

major cultural and entertainment attractions, offers the best solution to our curatorial, research, and educational needs. While this is a significant task, we are planning for a seamless move so that we can continue serving visitors throughout this period. Based on our current plan, I expect the Academy in Golden Gate Park to remain open through the end of this year.

Meanwhile we are also preparing for the new Academy that will rise up in place of our current buildings over the next few years. The new museum will blend in smoothly with

its park surroundings, and will be on the cutting edge of environmental-friendly design: a green building with modest energy requirements. The most striking design element of the new Academy will be a "living roof" that will serve as a natural insulator and absorb rainwater that would otherwise overload storm drainage systems. We have installed and planted prototypes on

the roof of Wild California Hall and soon in the courtyard—for easier viewing—that have slopes which resemble the slopes of the future roof. Over the next year, we will monitor them for exposure, sun, wind and shading, aesthetics, costs, and overall plant performance. With the help of Strybing Arboretum and the expertise of our own botanists, we expect to select native succulents, grasses and annuals that will mimic a natural community of plant diversity.

The living roof will be a striking element of the new Academy and will enrich the experience of both museum visitors and visitors to the park.

Patrick Kocolek
Executive Director



An example of a planted roof in Europe.

February Member's Lecture**To the Top of the World in Tibet**

The Academy's Dr. P. Christiaan Klieger has spent most of his career as a cultural anthropologist working with the Tibetan people, inside and outside of this vast, isolated region of Central Asia. Klieger first visited the exile home of the Dalai Lama in Dharamsala, India in 1978. It was nearly 20 years after the Dalai Lama left Tibet and went into exile with 100,000 of his supporters in response to the creation of the Tibet Autonomous Region by the People's Liberation Army of China.

In his latest book, *Tibet-o-Rama*, Klieger presents some of his most unusual experiences in the lands of the Tibetans. The memoir describes Westerners looking for epiphanies in Tibet, while Tibetans themselves look to find meaning in Western consumerism, global culture, and Western political sponsorship. Join Klieger as he recalls living and working with the Tibetan people in India, Nepal, Burma, and Tibet. *Booksing to follow the lecture. Thursday, February 13, 2 & 7:30 pm, free to members/\$8 non-members. Please note: this lecture is on a Thursday.* 

March Member's Lecture**The Nature of Islands
Uncovering the Galápagos**

Darwin's Galápagos Islands may be the most famous location for scientific research in the world. The Academy of Sciences has a 100-year long tradition of research on the islands. Yet many myths and unknown facts about the Galápagos Islands remain. Did you know:

- The first naturalist to visit the islands and write about his travels in a best-selling book was William Dampier, 150 years before Darwin.
- After the Academy was destroyed in the 1906 earthquake and fire, the new collections began with specimens brought back from the Galápagos.
- The best example of adaptive radiation in the Galápagos Islands are not Darwin's finches (with a mere 13 species), but rather land snails with 100 species—a quarter of which occur on a single island.

Academy Curator of Invertebrate Zoology Dr. Gary Williams explores the nature of evolution on oceanic islands, as well as the colorful 470-year history of explorers, buccaneers, exploiters, and scientists in these uniquely interesting islands, 600 miles off the coast of Ecuador. Wednesday, March 12, 2 & 7:30 pm, free to members/\$8 non-members. 

Members' Open House

Wednesday, April 30, 6 pm to 9 pm

Black History Month Celebration

Celebrate Black History Month at the California Academy of Sciences and experience African American cultural traditions and history. All programs are free. For the most up-to-date program schedule, check our Web site (www.calacademy.org), or call 415-750-7145.

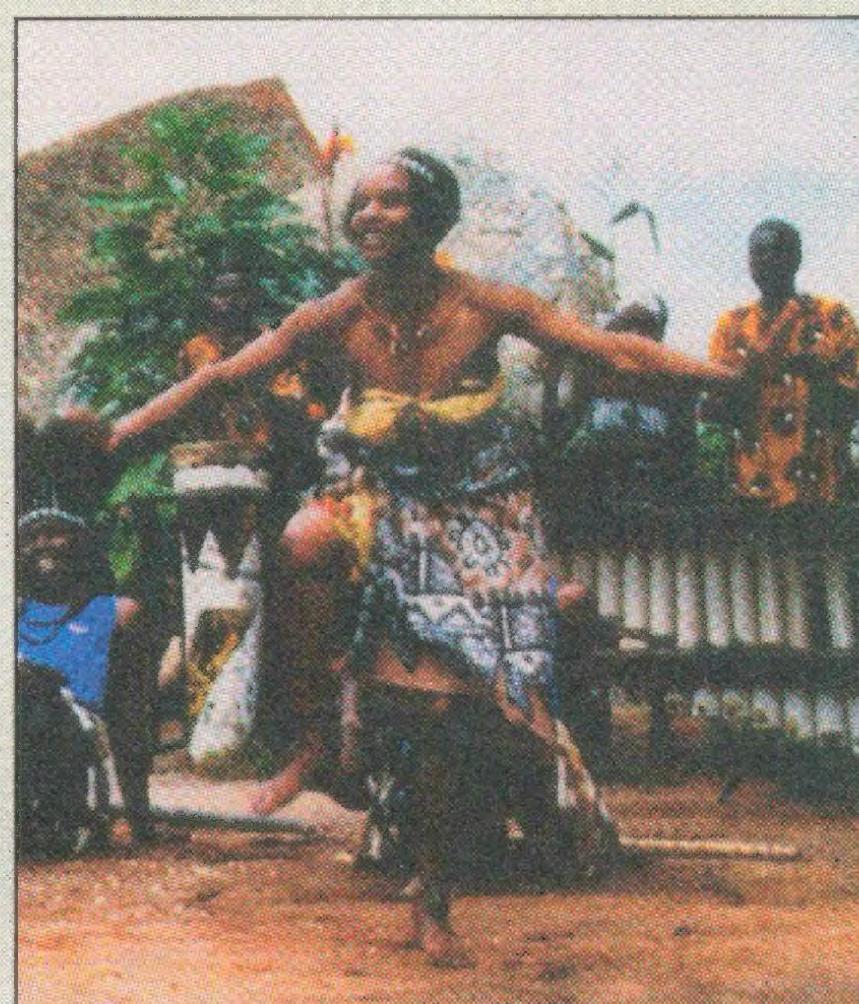
Chinyakare Ensemble

PHOTO: YOUNG AUDIENCES OF THE BAY AREA

The Chinyakare Ensemble

February 5, 1:00 PM, Auditorium 

Animal Tales from the African Diaspora

Poet and storyteller Tureeda Mikell brings us a selection of traditional stories from both African and African American traditions. *Saturday February 8, 1:00 PM, Auditorium *

West African Folk Music

Accompanying himself on the acoustic guitar and the talking drum, Soji Odukogbe presents a program of traditional music from West Africa. Well-known in the Bay Area African music scene, Soji also performs with The West African Highlife Band, The Nigerian Brothers, and Kotoja. *Saturday February 15, 1:00 PM, Auditorium *

The American Tradition of Ragtime

Ragtime is arguably the first truly American form of music, predating jazz. This presentation will include discussion of important ragtime composers, the emerging music business, and the world of vaudeville and commercial entertainment. *Saturday March 1, 1:00 PM, Auditorium *

The celebration continues with Mujjee: Come Together

As a child in Uganda, Daniel Ssuuna learned the important lessons in life through the songs, dance, proverbs and stories of his grandparents and elders. Using traditional instruments and movements, he shares this rich heritage. *Sunday March 16, 1:00 PM, Auditorium *

A Certain Curve of Horn: The Hundred-Year Quest for the Giant Sable Antelope of Angola

The giant sable antelope of Angola, with its striking coal-black coat and gracefully curved horns that reach over five feet long, was unknown to the world outside its highland habitat until 1916. This was the year "when two pairs of skulls and headskins were brought to London by H.F. Varian, the chief engineer supervising the construction of a railway through Angola to the Belgian Congo," recalls author and veteran journalist John Frederick Walker.

This revered and elusive sable remains one of Africa's most majestic antelopes and through the years, it has been transformed from a highly sought-after natural history prize to forgotten relic of a warring Angola to a political symbol and conservation icon.

In 1975, a civil war erupted in Angola and restricted access to the antelope for over 27 years. With the recent end of the war, Walker joined the first expedition that confirmed the species' survival (Angola lost 90% of its large animals). The giant sable antelope lived through Africa's longest running conflict in part because of its symbolic significance to each of the warring sides.

"Now that the civil war has come to an end," Walker explains, "proper conservation of this great animal can once again be undertaken."

Join Walker as he weaves the tale, detailed in his new book, *A Certain Curve of Horn*, with stunning photographs of the antelope and its habitat in a thrilling blend of history, natural science, and adventure. *Thursday, March 6, 7:30 pm, Morrison Auditorium, \$6 members/ \$8 non-members. Booksigning to follow the lecture.* **D**



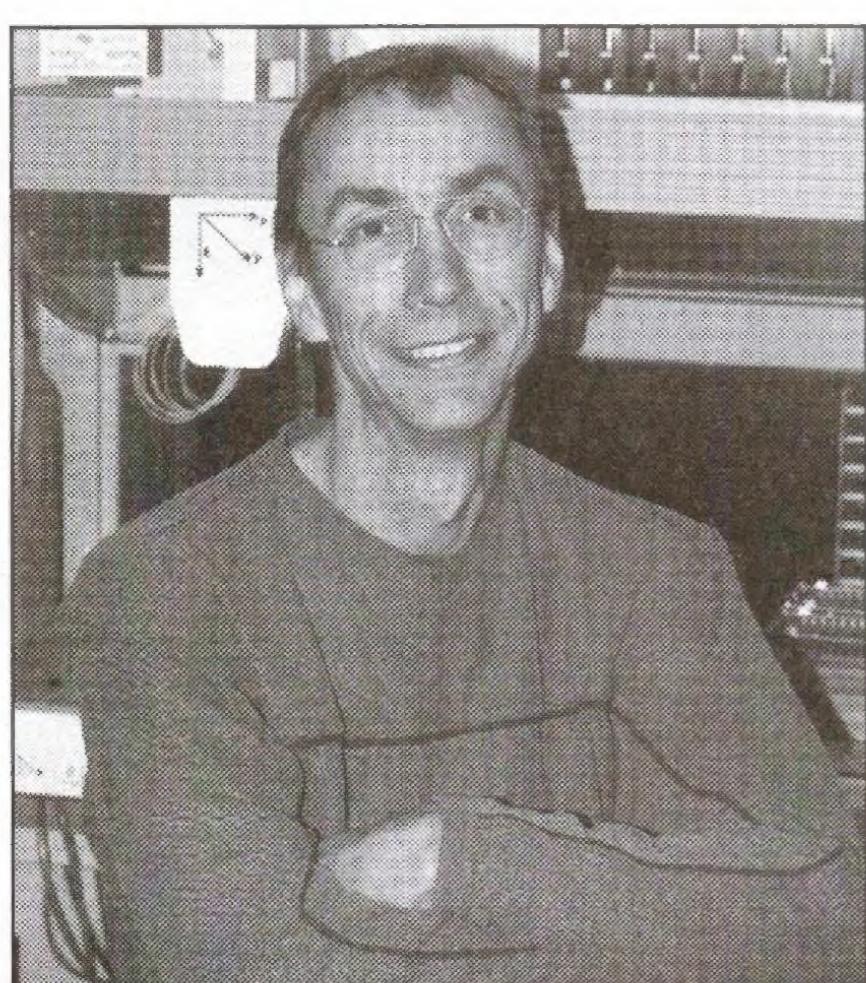
PHOTO: RICHARD ESTES

The giant sable antelope of Angola.



The Leakey Foundation

Leakey Speaker Series on Human Origins Genetic Perspectives on Human Origins



Svante Pääbo in the field.

Despite profound morphological, behavioral, and cognitive differences between humans and apes, the genome sequences of these species differ only slightly. Working to uncover the subtle genetic causes of these differences, Svante Pääbo analyzes the activity level of genes in the human brain as compared to the chimpanzee brain, including the first gene known to be involved in the ability of humans to use articulate language. Pääbo, whose reconstruction in 1997 of ancient DNA sequences showed that Neanderthals did not contribute any of the mitochondrial DNA found in contemporary humans, also explains what studies of genetic variation in humans and Neanderthals tell us about human history. *In collaboration with the Leakey Foundation. Thursday, February 20, 7:30 pm, \$6 members/ \$8 non-members.* **D**



Tickets to both lectures on this page may be purchased at the door, by using the form on page 14 or calling (415) 750-7128.

Conversations at the Herbst Theatre 2003

Presented by City Arts & Lectures, Inc.
All Programs at Herbst Theatre, 8 pm

- February 12 **Stephen Wolfram**
Wednesday physicist, computer scientist
A New Kind of Science • Mathematica
In conversation with Roy Eisenhardt
- The Annual Claire Matzger Lilienthal Distinguished Lecturer
- March 19 **Amory Lovins**
Wednesday founder & CEO, Rocky Mountain Institute
Natural Capitalism • Small is Profitable
In conversation with Keay Davidson
- April 22 **W. S. Merwin**
Tuesday poet
The Mays of Ventadorn • Flower & Hand
In conversation with Renée Rothmann
- May 14 **Russ Mittermeier**
Wednesday primatologist, president Conservation International
Megadiversity • Hotspots
- David Quammen**
science writer
Song of the Dodo • Boiler Plate Rhino
In conversation with John McCosker
- May 22 **Matt Ridley**
Thursday science writer
Genome • Nature via Nurture
In conversation with Roy Eisenhardt

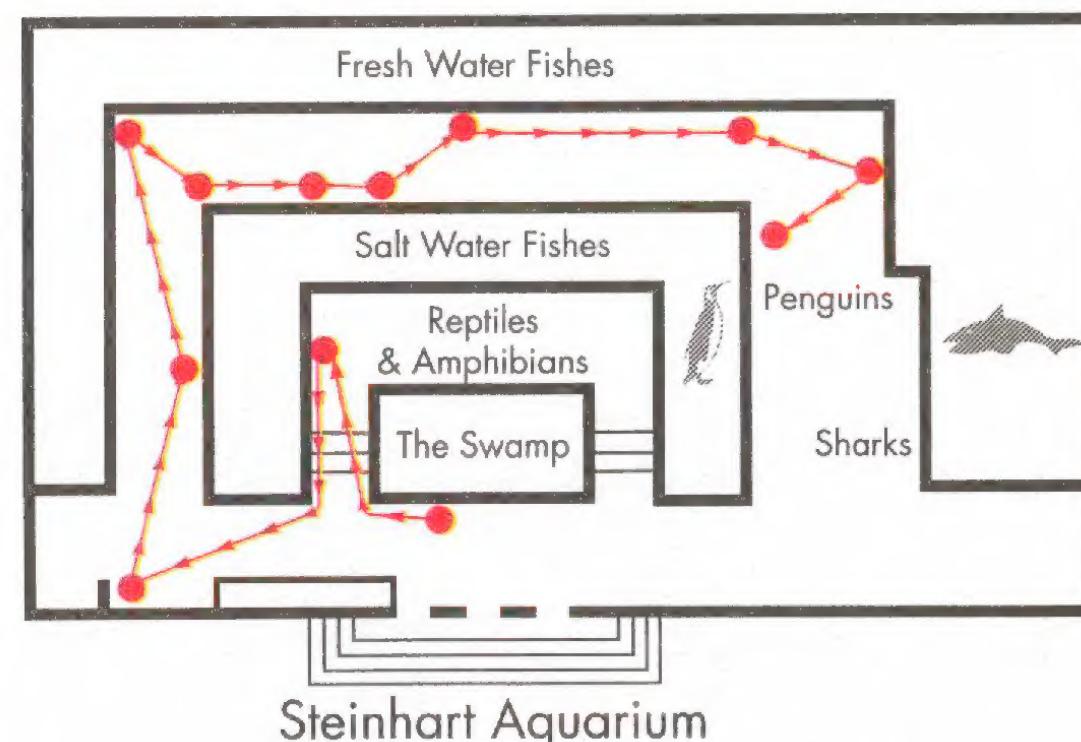
Lecture: \$16 members/ \$18 non-members **D**
Series: \$96 members/ \$108 non-members

This series is made possible, in part,
by a grant from the Richard and Rhoda Goldman Fund.

To order tickets, please call
City Box Office at (415) 392-4400.
www.cityboxoffice.com

**The California Academy of Sciences does not process
ticket orders for these lectures.**

Over the Hill & Under the Water



Take a self-guided tour of the Aquarium's oldest inhabitants.

As you enter the Steinhart Aquarium through our 80 year old brass doors meet the members of our "Old Timers Club". Thanks to the care of their aquarium keepers and our ever-expanding knowledge of animal husbandry, these animals have stayed alive and well at the Aquarium for at least twenty years.

In the Swamp with the alligators are five alligator snapping turtles who arrived in 1972 on a Delta Airlines flight after the menu was changed at Ginny's Charbroiler in San Bruno. Thanks to Delta's concern and California's Detrimental Species Regulations our 30 plus year old snappers were spared—and have since been seen by nearly 25 million guests.

Just east of the alligators is our oldest snake, an Eastern diamondback rattlesnake, age 33, which was donated as a 6 foot snake in 1969 by hobbyists in Arcadia.

Moving east to Tank 70 is the 21 year old Aba aba knifefish who has been battling aquarists for control of the glass brush since the late Al Castro lost the first battle.

Going to Tank 4 look for the solitary 34 year old California moray eel who was collected in 1968 on a Steinhart/Scripps Aquarium joint dive trip to the kelp beds.

Across the aisle to Tank 43 you'll find the "baby boomer" alligator gars which were driven 2000 miles to Steinhart in the 1940's from the San Antonio Texas Zoo. They expect to see the new Academy along with this baby boomer in 2008.

Living in Tank 5 are a couple of large red Telia anemones (25 years old) collected from Monterey Bay in 1977. Just around the corner in Tank 6 look for the large white plumose anemones which were collected in 1980 at a depth of 90 feet in Monterey Bay. An even older anemone is found in Tank 9 where the largest of the intense green anemones were collected from the vicinity of the Golden Gate Bridge in 1969.

On the other side of the aisle, not ready to retire at 65, is the Aquarium's patriarch, Methuselah. The largest of four Australian lungfish in Tank 36, he arrived from Melbourne in 1938.

Many of the freshwater fishes are in their 20's after being donated as adults by our hobbyist friends. Tank 25 has the 22 year old armored catfish and "dog eating" catfish.

Right next door in Tank 25 is the 26 year old giant beluga sturgeon. Leonid was hatched in the Volga River in Russia in 1976. His fellow fish are endangered in the Caspian Sea, so this animal may someday be a "Species Survival Plan" candidate!

Moving across to the Penguin Exhibit, say hello to Ursula, the penguin matriarch, who celebrated her 20th birthday this year!

—Tom Tucker, ttucker@calacademy.org

A Peek at Pepperwood Preserve



PHOTO: CAS EDUCATION STAFF

Sign up for a course at the Academy's Pepperwood Preserve, and keep your eyes peeled for a variety of wildlife.

"While Pepperwood is home to some threatened species," Gillogly explains, "it is the diversity of life that makes the preserve so important in an area of incredible growth and development."

Open by reservation only, the preserve hosts a variety of Academy programs including a summer camp, general natural history walks, stargazing programs, and family overnights. Upcoming events include a downhill, off-trail exploration, "Pepperwood Watershed Ecology," with Gillogly on February 1 and the celestial "Messier Romp" with astronomer Darryl Stanford on March 29–30. For more information and registration details, visit the online course catalog at www.calacademy.org/education or call (415) 750-7100.

—Anna Barr

More Courses

Splint Market Baskets

Use your hands to discover Old World traditions by weaving a basket suitable for taking to market. Instructed by basket maker Kathleen Hubbard. *Adult Workshop—Saturday, February 15, 10 am–4 pm \$75 non-members/\$65 members (Plus \$17-material fee per person)* **D**

Evolution and Life Through Time

Find out about new concepts in evolutionary biology, systematics and paleontology. Instructed by Academy paleontologists Peter Roopnarine and Carol Tang. *Adult Seminar—3 Wednesdays, February 19, 26 & March 5, 7–9 pm \$65 non-members/\$55 members* **D**

A Glimpse of Ishi Country

Discover the story of Ishi, the last North American Stone Age Indian, through the instructor's own adventures into the canyons of Mount Lassen. Instructed by naturalist Kurt Rademacher. *Adult Seminar—Thursday, February 27, 7–9 pm \$25 non-members/\$20 members* **D**

Tidepooling at Duxbury Reef

Discover everything from mollusks to the moon on this tidepooling adventure. Instructed by Academy educators Roberta Ayres and Jeff Dorman. *Adult Field Trip—Saturday, March 15, 2–5 pm \$45 non-members/\$35 members* **D**

California Spring Wildflowers

In this intensive course, identify wildflowers and recognize plant families using *The Jepson Manual*. Instructed by botanist Glenn Keator. *Adult Seminar and Field Trip—8 Wednesdays, March 19–May 21, 7–9 pm & 3 Saturdays, March 22, 29 & May 3, 10 am–2:30 pm \$200 non-members/\$180 members* **D**

Exploring Point Reyes Habitats

Take a comfortable five-mile hike past elk, sea stars and seals. Instructed by Academy educator Ashley Conrad-Saydah. *Field Trip for Families with Children Ages 8 and up—Sunday, March 23, 10 am–3 pm \$40 adults/\$30 children, non-members; \$30 adults/\$20 children, members* **D**

Skies of Spring

From the comfort of Morrison Planetarium, learn to locate Leo the lion, Virgo the maiden, Cancer the crab, and Hydra the sea serpent in this seasonal stargazing favorite. Instructed by astronomer Darryl Stanford. *Adult Seminar—3 Mondays, March 24, 31 & April 7, 7–9 pm \$50 non-members/\$40 members* **D**



For registration information and more details, including other course offerings, call (415) 750-7100 or visit www.calacademy.org/education.

Ragtime: The First American Music?

Mention the word "ragtime" and most people think of Scott Joplin's "The Entertainer" and the popular movie, "The Sting." This film, which won the Academy Award for Best Musical Score, sparked a renewal of interest in ragtime music in the United States. Ragtime's first heyday began back in the late 1890s and lasted for two decades.

Ragtime is a lively style of music in which a syncopated melody is played against a steady, "boom-chick" accompaniment. The genre gets its name from the practice of "ragging"—transforming a "straight" musical line into something with a bit of a swing. Syncopation is the hallmark of the rag.

Many date the origins of ragtime music to the publication of the first rag music scores in the late 1890s. But ragtime actually emerged earlier in the performances of black itinerant pianists who lived and worked in the Mississippi Valley.

Although the piano is the instrument most closely associated with the rag, much of ragtime music was played by ensembles in local music halls and on the vaudeville circuit. Violinist David Reffkin, who has been collecting ragtime orchestrations for nearly thirty years, founded The American Ragtime Ensemble in an effort to recreate the "tuneful, danceable, singable, embrachable melodies" of a "gentler" era. Using orchestrations from Reffkin's collection, his group performs lively and engaging selections by well-known composers like Joplin and by forgotten geniuses of the genre.

David Reffkin directs The American Ragtime Ensemble in a special concert at the Academy on Saturday, March 1, 1 pm in Morrison Auditorium. F

—Dr. Jennifer Michael, jmichael@calacademy.org

Animal Tales from the African Diaspora

Poet and storyteller Tureeda Mikell brings us a selection of traditional stories from both African and African American tradition. *This is a special program in honor of Black History Month. Saturday, February 8, 1 pm F*

West African Folk Music

Soji Odukogbe, from Nigeria, presents a program of traditional music from West Africa. Mr. Odukogbe, who is well-known in the local African music scene, accompanies himself on the acoustic guitar and the talking drum. *This is a special program in honor of Black History Month. Saturday, February 15, 1 pm F*

Tongan Traditional Dance

The dances of Tonga, like those of much of Polynesia, focus attention on the hands and feet. But each region has its own unique postures and styles of movement. In this program, dancers from the Heilala o Tonga Group perform a series of traditional dances from this island nation. The program will feature live music and discussion of the dancers' costumes and movements. *Saturday, February 22, 1 pm F*

Japanese Woodblock Printing



Woodblock print by Marco Marinucci entitled "Tomoko Murakami, II" (3/8)

Artist Marco Flavio Marinucci demonstrates the process of making woodblock prints in the traditional Japanese style. He handles all aspects of the process himself, from carving the wood blocks and making the colorful inks, to the actual printing onto mulberry paper. *Saturday, March 8, 1 pm F*

German Folk Songs



Kronau-Sorenson sings German folk songs (3/15)

Barb Kronau-Sorenson, on tour from Chicago, performs traditional German songs. Her repertoire includes lullabies, yodeling, and other lively tunes. *Saturday, March 15, 1 pm F*



Presentations are free; no reservations are needed. For further information on these and other Traditional Arts Programs, contact Dr. Jennifer Michael at (415) 750-7165, or visit www.calacademy.org. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

On Our Cover

The Academy chose a spiral as the symbol of its 150th anniversary because it is a pattern found throughout nature, including one of the Academy's many scientific disciplines.

February 2003 at the Academy

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						Story Time 10:30am
					1	Story Time 10:30am AC Pepperwood Ecology 10am–3pm p6
					8	Story Time 10:30am FP African Animal Tales 1pm p3 and p7 FP Make A Skull 12:30–3:30pm p11
				7	SP Natural Selection 8:30–midnight p15	
		6			14	
	5		FP Darwin's Road Show 5:30–7:30pm p15 FP Chinyakare 1pm p3 FP Make A Skull 12:30–3:30pm p11 FP How Do They Do That 11:30 & 1:30pm p11		15	Story Time 10:30am FP West African Music 1pm p3 and p7 AC Splint Market Baskets 10am–4pm p6 FP Make A Skull 12:30–3:30pm p11
	4				13	I Tibet 2 & 7:30pm p3
	10			11	12	I Stephen Wolfram 8pm p5
	3					Charles Darwin's Birthday
	2				18	
				9	19	I Genetic Perspectives on Human Origins 7:30pm p4
				16	20	AC Evolution and Life begins 7–9pm p6 p4
				17	21	
				1	22	Story Time 10:30am FP Tongan Dance 1pm p7 FP Make A Skull 12:30–3:30pm p11
					23	
					24	
					25	I = Lecture (415) 750-7096 PE = Planetarium Event (415) 750-7127 FP = Free Family Program (415) 750-7145 FC = Family Course (415) 750-7100 AC = Adult Course (415) 750-7100 SP = Special Program (415) 750-7145
					26	AC Ishi Country 7–9pm p6
					27	
					28	

The California Academy of Sciences is open 365 days of the year.

March 2003 at the Academy

150 Years of Science: Exploring Nature's Wonders

Before Cable Cars, the Pony Express, or even Golden Gate Park, there was the California Academy of Sciences. Founded in 1853, the Academy will celebrate its 150th anniversary in 2003 with an array of public activities and a special exhibit. Kicking off the festivities with its opening day on March 1, 2003, the new exhibit will feature an enormous timeline streaming through several Academy halls, giving visitors the chance to walk through 150 years of history as they learn how world events and major discoveries have shaped the pursuit of science and the Academy.

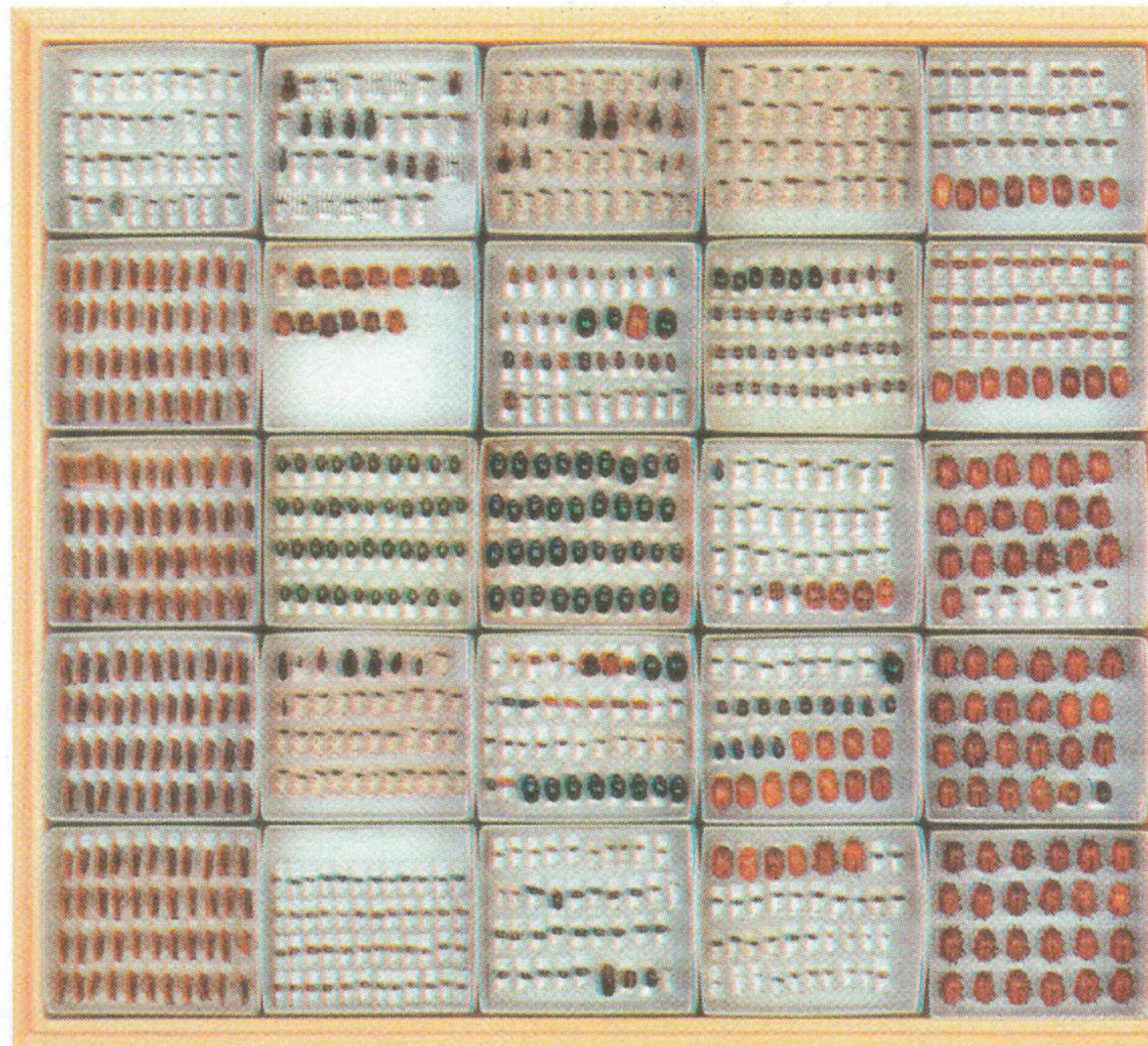
From our founding during the gold rush days of the Wild West (the Academy's first President was shot over a bad debt) to its flexibility during World War II (the Instrument Shop was enlarged and converted into a repair shop for U.S. Army and Navy optical equipment in 1941), the Academy's history has been nearly as colorful and impressive as its collections, which will also be highlighted in the exhibit. Throughout the Museum floor, outposts dedicated to each of the Academy's areas of focus will feature surprising stories from the research departments' histories as well as a few of the treasured items from their collections—many of which have never before been displayed. Included in this all-star line-up will be enormous tortoise shells and lizards collected during the first Academy expedition to the Galápagos Islands, a live scorpion that fluoresces under ultra-violet light, and ancient Maya artifacts from highland Guatemala that survived San Francisco's 1906 earthquake and fire.

Within the new exhibit, visitors will also get the chance to revisit pieces from

some of their favorite past exhibits, including the original 1953 pendulum, botanical models from Botany Hall, and the warthog from the African Annex. Throughout the Academy, additional historical markers will highlight scientific or technological innovations within existing exhibits, like the Steinhart Aquarium's coral reef tank or alligator pit. Special displays will show visitors what these spots were like when they were new and why they are significant today. At the end of the timeline, visitors will have the opportunity to preview some of the exciting designs and exhibits for the new Academy, which is scheduled to open to the public in 2008.

In addition to the special exhibit, more than two hundred classes, workshops, lectures, and performances will dot the celebration schedule of the Academy's 150th year. The culminating event in this chain of celebrations will be a large public festival during the weekend of September 6 and 7, 2003. Thousands of people are expected to turn out for this two-day celebration, which will be held in the style of a street fair in the Academy's front yard—the Music Concourse of Golden Gate Park. Booths representing dozens of Bay area organizations and vendors will sit alongside those housing Academy scientists and educators, all offering a range of family activities, performances, natural curiosities, and special merchandise.

Throughout 2003, as you visit the Academy's exhibits, classes, lectures, and festivals, please join us in celebrating a great beginning for the California Academy of Sciences—150 years of scientific discoveries and education.



These beetles are just a few of the Academy's 18 million-strong collection of research specimens, many of which will be featured in the 150th Anniversary Exhibit, Exploring Nature's Wonders.



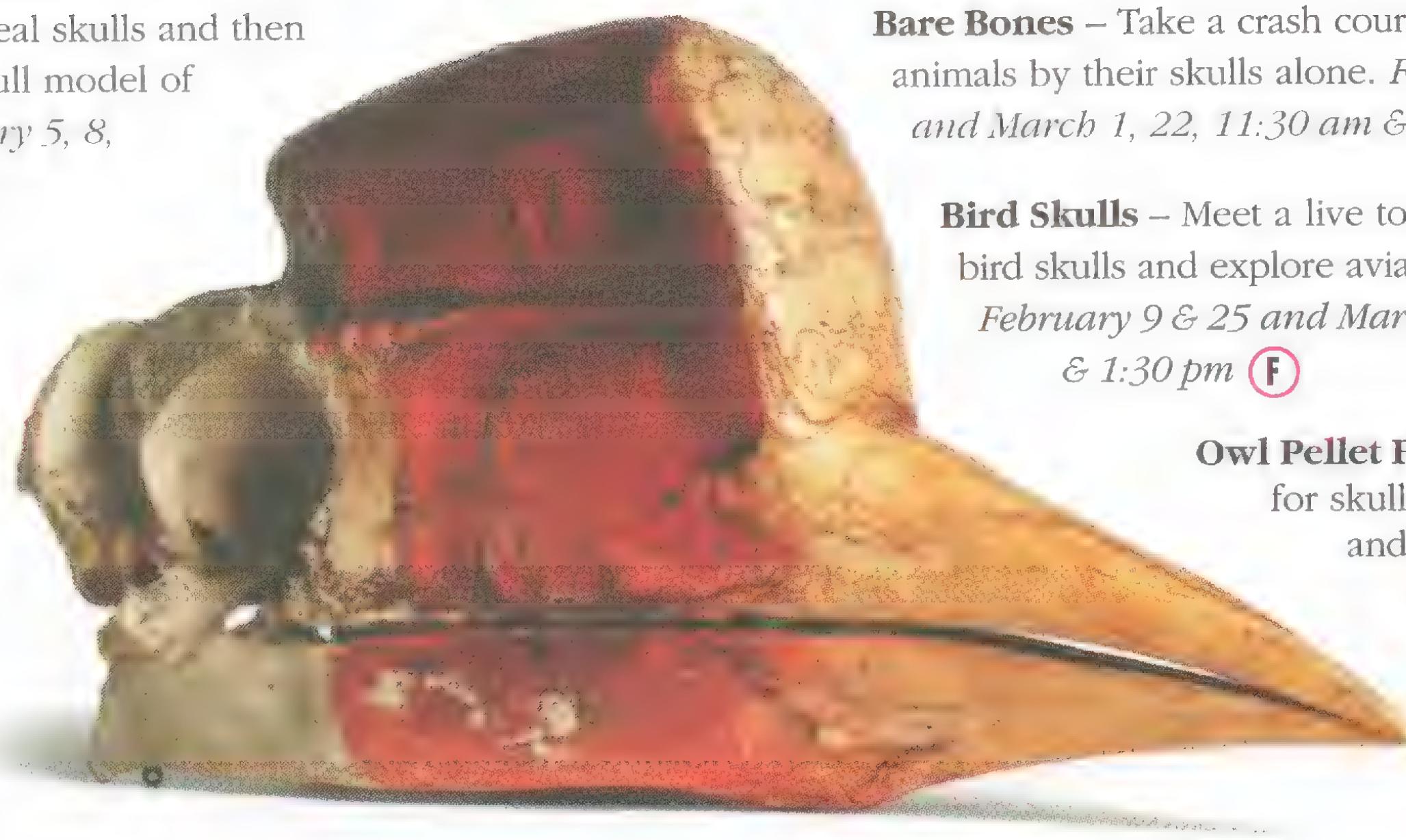
Alice Eastwood, a former curator of botany in the field with a plant press. The photo is believed to have been taken near Warner Hot Springs in San Diego, circa 1913.

Skull Skills

Make A Skull – Examine real skulls and then make a simple machine skull model of your own. *All ages. February 5, 8, 9, 15, 16, 22, 23 & 25 and March 1, 2, 8, 9, 15, 16, 22, 23, 29 & 30, all days: 12:30 pm to 3:30 pm* **F**

How Do They Do That?
– How do animals locate prey without seeing it or hearing it? Or swallow prey bigger than their heads? Explore animal senses by looking at skulls. *February 5 and March 16, 11:30 am & 1:30 pm* **F**

Mysterious Victims of Flying Predators – Examine the hunting technique of hawks, eagles and other flying predators, then help reconstruct the scene of the crime as we identify the skulls of their prey. *February 16, 11:30 am & 1:30 pm* **F**



Bare Bones – Take a crash course on recognizing animals by their skulls alone. *February 10, 17 and March 1, 22, 11:30 am & 1:30 pm* **F**

Bird Skulls – Meet a live toucan, touch real bird skulls and explore avian skull design. *February 9 & 25 and March 30, 11:30 am & 1:30 pm* **F**

Owl Pellet Forensics – Look for skulls in owl pellets and find out who is on the menu. We'll provide owl pellets, dissecting tools, and skull identification guides. *Tuesday's, February 18 and March 18, 11:30 am* **F**



All programs are free and take place in the skulls exhibit. For more information call (415) 750-7143.

PHOTO: DAVID LIITSCHWAGER ©2002

Volunteer Profile Volunteers for the Future



PHOTO: DONG JIN

Amir Hasan Abdullah (left) and Alyosha Maggin (right) work with preschoolers in the Early Childhood playspace.

It's probably the last thing they imagined they would be doing. But when two Raoul Wallenberg High School seniors recently signed up to fulfill community service pledges at the Academy, they landed in the Early Childhood playspace near African Hall. For Amir Hasan Abdullah it is a natural fit.

"My mother runs a day care service, so I've always been around preschoolers. In fact, my experience in the playspace has made me even more passionate about what I want to be, a pediatrician."

Alyosha Maggin says the experience has "given me a taste of how parents manage childhood and use their parenting skills. I also like to observe children and figure out what their thought processes are."

All of this sounds very heady. But the students do have fun watching their young charges. "The children are unafraid, they notice more than the adults, and are drawn to the specimens and artifacts in the playspace; things they don't have at home."

Alyosha and Amir admit they have even more fun than the children, and consider their time at the Academy relaxing and a wonderful departure from their hectic everyday schedules.

Recently, both watched with amusement as four adults unsuccessfully tried to put together the giant giraffe wall puzzle only to be outsmarted by a young child who did it in seconds.

Both agree that children are fascinated with the natural world and that the Academy provides a warm educational retreat.

—Rosalind Henning, rhenning@calacademy.org



To learn more about becoming a volunteer or to sign-up, call (415) 750-7154.

F/**F** = Free to all/Free to members

www.calacademy.org

D = Discounted for members

Sky Shows

The night skies of late winter are graced by the brilliant stars of the Winter Circle, which can be seen rising in the east just after dark. Orion the Hunter, Taurus the Bull, and Gemini the Twins can be found here, with the ringed planet Saturn shining between the horns of Taurus and the giant planet Jupiter outshining the stars of Cancer the Crab around it.

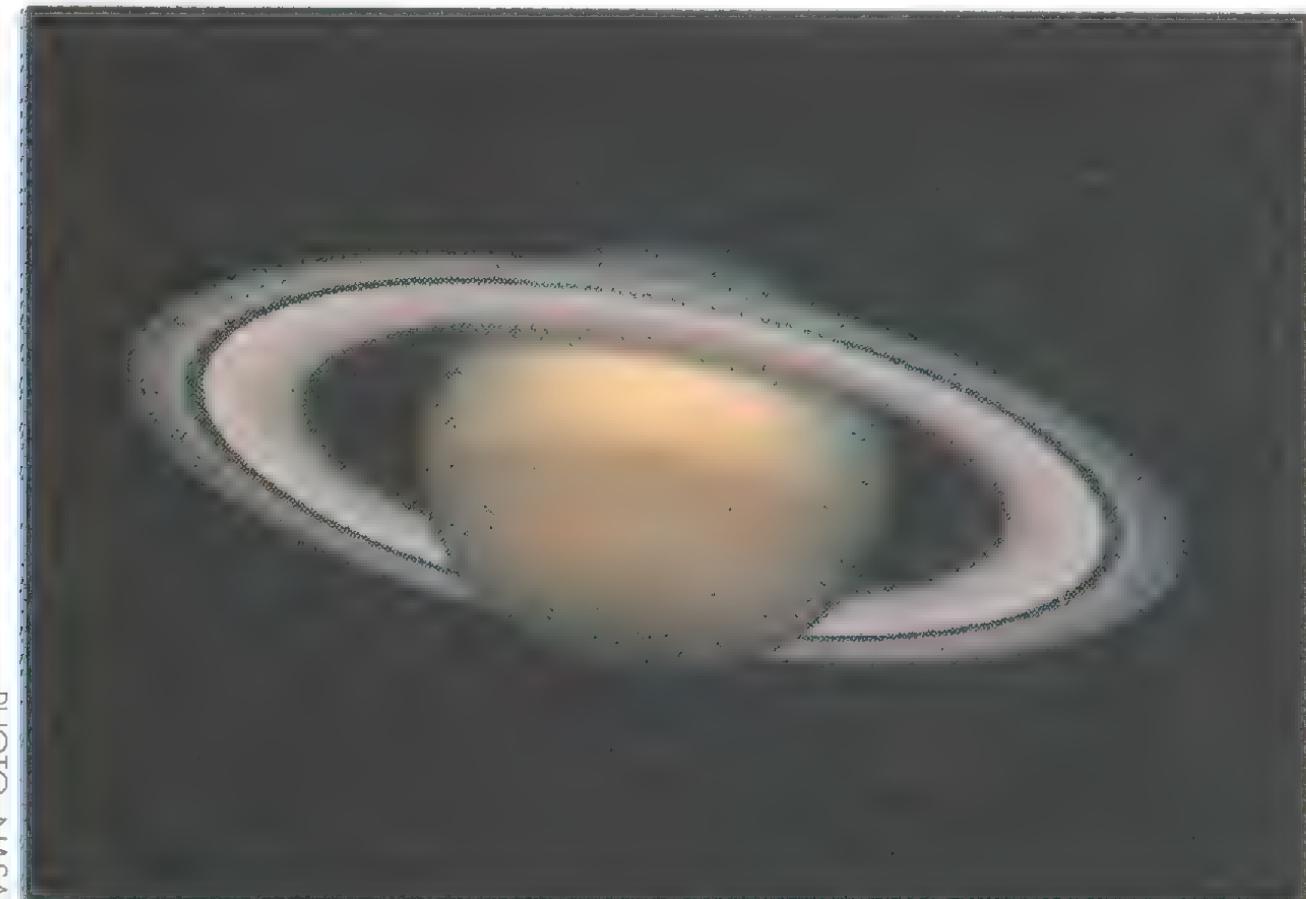


PHOTO: NASA

Find out when to see Saturn at its best in 2003 Almanac.

The Quadrantid meteor shower, one of the best of the year, has already come and gone, but **2003 Almanac**, our annual look ahead at the year's coming astronomical events, shows other celestial sights that we will be able to see during the coming months. Two lunar eclipses will be visible from San Francisco, as will the closest approach by Mars in recorded history! This show is presented daily at 2 p.m., with an extra show at 3 p.m. on weekends. It continues through March 9th.

Stars Over San Francisco—Then and Now, our 50th anniversary show, continues as the second feature at 1 p.m. on weekends. Find out how the Planetarium and our knowledge of the Universe have both changed over the past 50 years. Weekend shows also include the family presentation, **What's Up?**, featuring Moon Mouse, at 12 p.m., and **The Sky Tonight**, our tour of the current night sky, at 4 p.m.

On March 10th through the 13th, the Planetarium will be closed for the installation of the next feature, **150 Years From Earth**, which begins on Friday, March 14th.

i **Members may exchange their planetarium vouchers for free tickets to Sky Shows at the Planetarium Ticket Desk in Gary Larson Hall, starting 30 minutes before each show. Additional tickets may be purchased 30 minutes before each show. \$2.50 for adults & \$1.25 for children 6-17 and senior citizens over 65. Shows are approximately 40 minutes long. For more information call (415) 750-7141 or visit www.calacademy.org/planetarium. Schedules subject to change.**

Spring Dean Lectures

The Spring schedule of Dean lectures was not announced at press-time. This information will be available soon by calling (415) 750-7141.

Ask The Librarian

Q: Why do swordfish have swords?

A: We can't tell you why exactly, but we can tell you that, at least some of the time, swordfish use their swords when feeding. Fish with slash marks have been found in swordfish bellies, and dolphinfish have been seen impaled on their swords. The information above is from *Probably More Than You Wanted to Know About the Fishes of the Pacific Coast* (Love, Milton, Santa Barbara, CA: Really Big Press, 1996), which is available in the Academy Library.

*Ophioplacus esmarki; Brittle Star*

A: Brittle stars (marine invertebrates related to sea stars) are found in all the oceans of the Earth. There are about 2,000 known species of brittle star (Encyclopædia Britannica, volume 2,

15th edition). For more information on these creatures, check out http://www.calacademy.org/science_now/archive/wild_lives/brittlestar.html

i **Academy reference librarians are available to answer your questions, whether simple or complex. Call (415) 750-7102, email library@calacademy.org or click on the library section of the Academy's homepage, www.calacademy.org.**

PHOTO: GERALD AND BUFF CORSI © CALIFORNIA ACADEMY OF SCIENCES

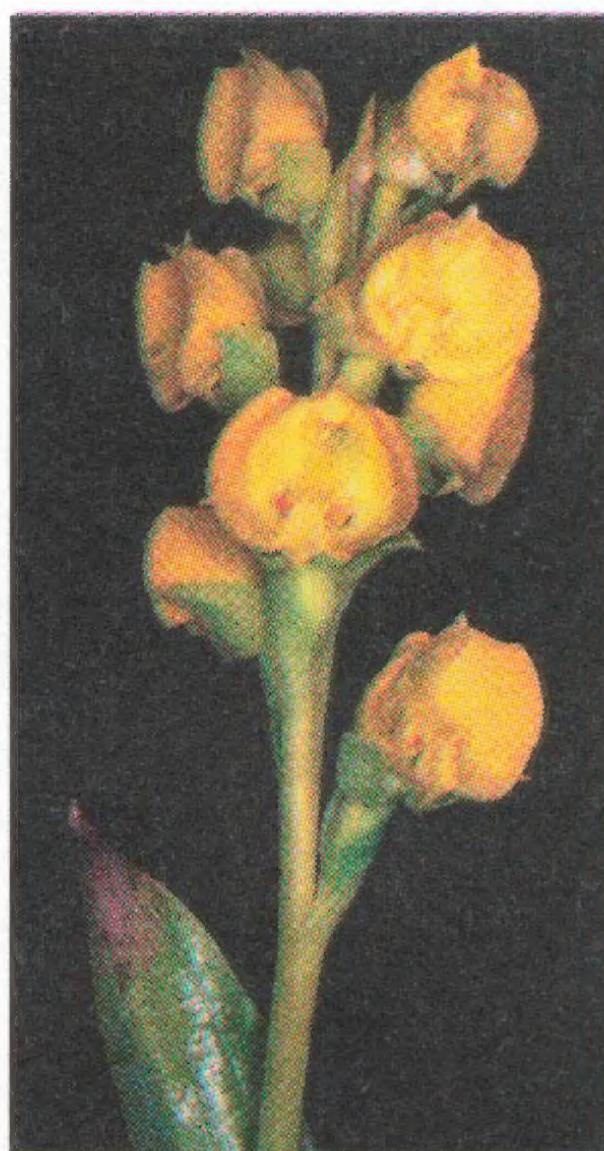
A Tiny Bit of History

In the last issue of the newsletter we told you how the realism of the sky produced by the Morrison Planetarium's classic star projector is due in part to the projected stars' having irregular shapes. This is because sand-like grains of carborundum grit, sorted by size, were used to represent the stars. These were hand-placed on the optical surfaces that were to be used as the "slides" projected onto the dome. They were coated with vaporized aluminum and the grains were brushed off, leaving tiny holes in the opaque aluminum through which light could shine to produce the images of the stars. But you may not know that G Dallas Hanna, the Star Projector team leader back in the 1950s, wanted the star shapes on the optical lenses to be formed by diatoms—tiny algae which are among the world's smallest organisms. Only after he had given up on diatoms did he turn to carborundum crystals.

In Research...

Scent-sational Science

To trace the course of evolution, Kim Steiner follows his nose.



Kim Steiner collects floral scents by pumping perfumed air through a chemical trap.

The Swiss scent specialists at Givaudan power perfumes by Calvin Klein, Cartier and even Michael Jordan. They also power evolutionary research by Academy scientist Kim Steiner.

Steiner, who is studying the evolutionary relationship between a flower's scent and its pollinators, recently returned from a trip to South Africa, where he analyzed the aromas of orchids with the help of equipment and expertise from Givaudan. To collect a scent to study, Steiner would invert a glass dome over one or more flowers and pump the scent-infused air through a chemical "trap" that captures passing fragrances. He would then send the traps to his collaborator, Roman Kaiser, in the research labs of Givaudan. After extracting the scents from the traps, Kaiser would inject them into a gas chromatograph-mass spectrometer that can identify the amounts and kinds of chemicals that make up a fragrance.

Givaudan uses this data to inspire new designer perfumes or candle scents. Steiner uses it to understand how floral scents evolve among closely related species that share a specialized pollination system.

Over the past few years, Steiner has made several trips to South Africa and has identified dozens of new species in the snapdragon and orchid families. Oil-producing orchids in the subtribe Coryciinae were the focus of his most recent research. These pungent, soapy-smelling flowers are mostly pollinated by a single species of solitary oil-collecting bee. Now that Steiner knows the secrets of their scents, he can trace their evolution on the orchid family tree.

In Retrospect...

Things You (Probably) Didn't Know About the Academy

- In 1928, a member of the Academy was elected President of the United States. Following his term in the White House, he served as Vice-President of the Academy. Who was it? (see below for answer)
- Our first computer arrived in 1973—a Hewlett-Packard Model 9830A Programmable Calculator (Mini-Computer) that could be programmed in BASIC.
- Current employee who has been here the longest: Dr. Alan Leviton, Curator of Herpetology, who arrived in 1956 to supervise the student section. (Dr. Ed Ross, entomology curator emeritus, began working at the Academy in 1939.)
- Aquarium Inhabitant who has been here the longest: an Australian lungfish which arrived in 1938, already an adult. See page 3 for more information.
- During the 1918 influenza epidemic the Academy was closed for 29 days to discourage people from gathering in large groups.
- Other closures have resulted from the 1983 visit of Queen Elizabeth II and President Ronald Reagan, the 1989 Loma Prieta earthquake, and the 2001 fire.
- Members of the 1905–1906 Galápagos expedition received word in the islands of the huge earthquake in San Francisco only 12 days after the event.
- Ansel Adams was a Research Associate of the Academy in the 1950s, and took photos used for souvenir postcards and annual reports.

Answer: Herbert Hoover

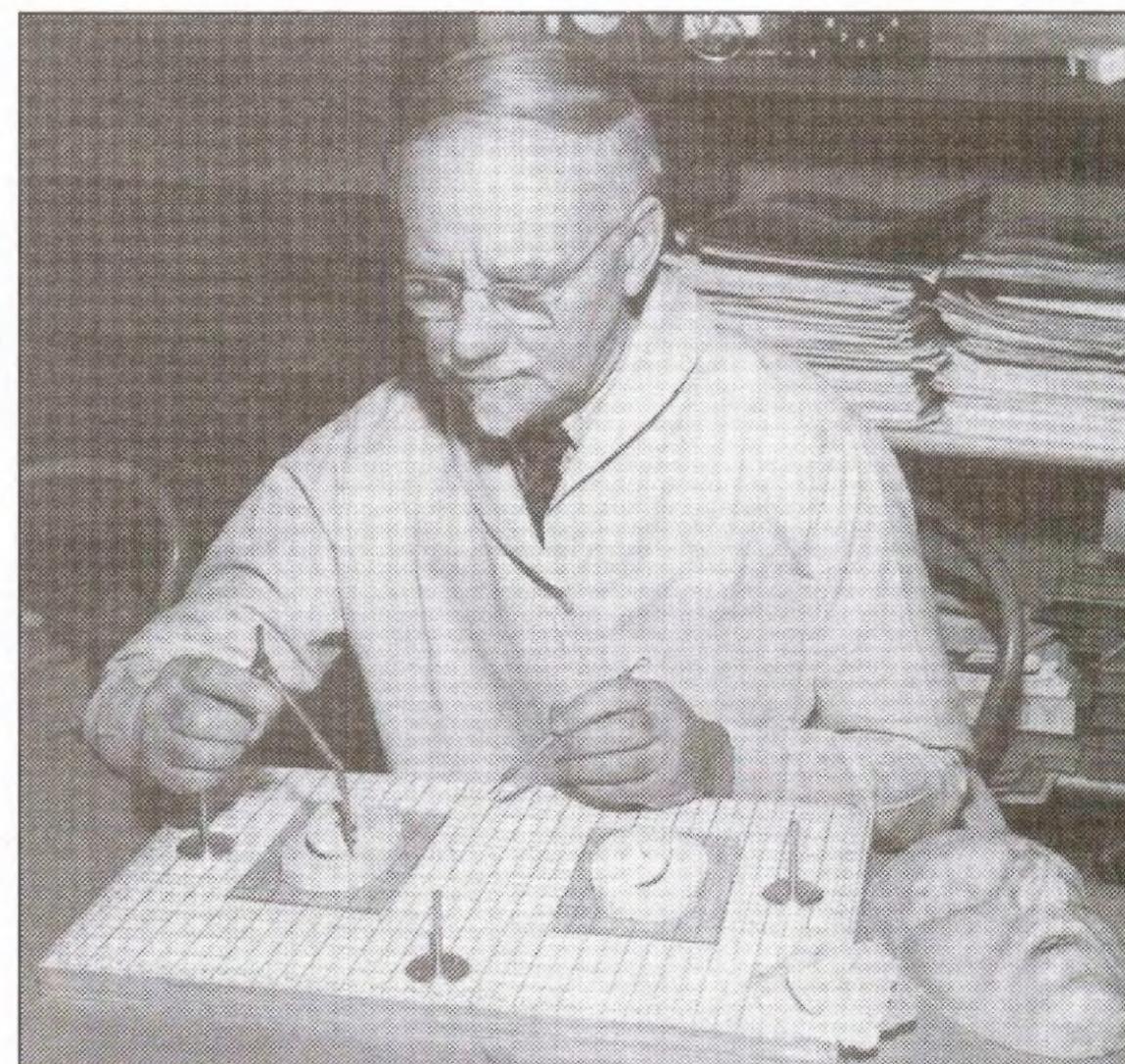


PHOTO: SPECIAL COLLECTIONS/CAS LIBRARY [N7956B]

During WWII, Exhibits Chief Frank Tose used his modeling skills to produce prosthetic ears for injured servicemen.

—Michele Wellck, Academy Archivist, mwellck@calacademy.org

Off the Beaten Track in China**May 31–June 15, 2003**

Tour Leaders: Nina Jablonski, George Chaplin and William Wu

This exciting and off the beaten track itinerary has been designed exclusively for Academy travelers by Dr. Nina Jablonski and Dr. William Wu. Visit remote hilltop and riverside tribal villages, learn animistic beliefs, view agrarian activities, cottage architecture, extraordinary textile art and silver crafts and stroll in a forest preserve.

Following an exploration of the incredible city of Shanghai you will depart for Guizhou Province in southwest China which supports 64 species of endangered and protected plants and the Guizhou snub-nosed monkey, an endemic primate restricted to the Fanjing Shan National Nature Reserve. You will also spend time in Mt. Fanjing which supports intact forest and rare species such as the giant salamander and dove tree, and in Yunnan which has the richest flora in the world.

Cost: \$6995 per person (based on double occupancy) including air from San Francisco.



Terraced fields in southwest Yunnan Province, China.

Russia and Alaska: From Russia's Kamchatka Peninsula to Alaska's Kenai Peninsula**Aboard the 128 passenger Clipper Odyssey
June 19–July 3, 2003**

Tour Leaders: Dave and Bev Kavanaugh

On this unique voyage from the remote and seldom-visited Russian Far East to the Aleutians and Alaska's Kenai Peninsula, discover the rugged Komandor Islands and the "Land of the Smoking Volcanoes." Learn about the area's historical significance with visits to Bering Island and Attu Island. Zodiac landing craft will take you around hidden bays and unique geological formations where onboard naturalists and marine biologists will help you identify a wide array of wildlife including brown bear, Russian sea otters, humpback whales, and flocks of birds that often include Stellar's sea eagles, fulmars and horned puffins. *Cost: \$6,500 to \$9,300 per person (based on double occupancy) including air from Anchorage to Petropavlovsk.*



For information on these tours, please call the Academy Travel Office at 800/853-9372, or e-mail calacademy@hcptravel.com



Published by California Academy of Sciences

Executive Director: Patrick Kocielek, Ph.D.**Publications Manager:** Keith Howell**Editor:** Eliot Dobris

Contributors: Anna Barr, Laura Burkhart, Stephanie Greenman, Rosalind Henning, Deidre Kernan, Christiaan Klieger, Jennifer Michael, Bethany Morookian, Justin Oser, Tinka Ross, Juan-Carlos Solis, Leslie Quillin, Bing Quock, Kevin Welch, Michele Wellck

Design & Production: Martha Murray Design

Editorial Office: Marketing & Communications
California Academy of Sciences
Golden Gate Park, San Francisco, CA 94118
(415) 750-7487 info@calacademy.org

ORDER FORM**LECTURES & EVENTS****QTY MEMBERS****QTY NON-MEMBERS****TOTAL**

Tibet

FREE

X\$8

= _____

Genetic Perspectives

_____ X\$6

X\$8

= _____

A Certian Curve of the Horn

_____ X\$6

X\$8

= _____

Uncovering the Galápagos

FREE

X\$8

= _____

FIELD TRIPS, SEMINARS AND WORKSHOPS

To register for courses and other education offerings see page 10.

DONATIONS Yes, I would like to support the Academy with a donation. \$ _____**TOTAL PAYMENT ENCLOSED** \$ _____ Check (made payable to CAS) Visa Mastercard American Express (\$10 minimum on credit card orders)

Card Number _____

Exp. Date _____

I WOULD LIKE INFORMATION ON:

- making a gift from my will or living trust. giving from retirement plan proceeds.
 the benefits of life income plans. I have provided for the Academy in my will or other estate plan.
 becoming an Eastwood Associate

YOUR NAME: _____

Phone _____

Address _____

Member # _____

City _____

State _____

Zip _____



Mail payment and order form to: Membership Office, Ticket Services, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. **Include a self-addressed, stamped envelope for each series to which you subscribe. No refunds/exchanges. To order by phone call (415) 750-7128.**

Darwin's 194th Birthday

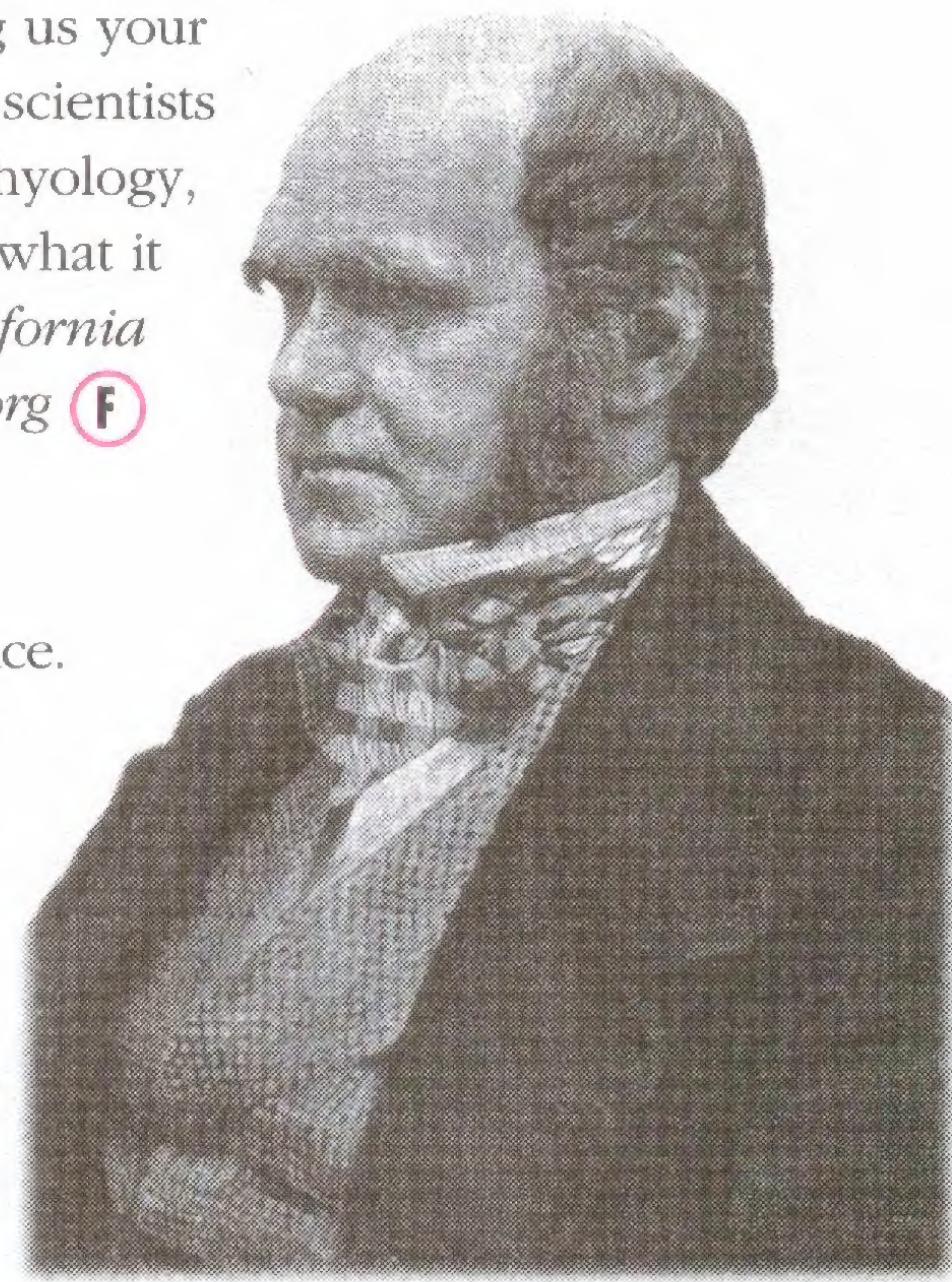
The Academy is proud to pay tribute to Charles Darwin and his research with a two-part birthday celebration beginning February 5. Bring your family to Darwin's Road Show, Wednesday, February 5. From 5:30–7:30 pm visitors are invited to bring in objects from the natural world for our scientists to identify. Next, it's an evening of revelry and romance on Friday, February 7, when we celebrate Darwin's theory of Natural Selection with Lavay Smith and Her Red Hot Skillet Lickers.

Darwin's Road Show

Did your uncle leave you a butterfly collection you don't know how to identify? Do you wonder about the evolutionary significance of the bright blue feather you found in your backyard? Bring us your leaves, worms, bugs, rocks, feathers and bones. Our experts will identify them. Academy scientists from the fields of Anthropology, Aquatic Biology, Botany, Entomology, Herpetology, Ichthyology, Invertebrate Zoology, Geology, Ornithology and Mammalogy will be on hand to tell you what it is, where it comes from and why it's important. *Wednesday, February 5, 5:30-7:30 pm, California Academy of Sciences, FREE - for information call (415) 750-7145 or visit www.calacademy.org* (F)

Natural Selection

Celebrate Darwin's Birthday with the Academy Explorers for an evening of revelry and romance. Headliner Lavay Smith and Her Red Hot Skillet Lickers will entertain with classic jazz and funky blues. Later, visitors may "smooch under the stars" during a special planetarium show. Those who prefer to pucker up among the fishes may wander through the aquarium. To top it all off, enjoy a sumptuous dessert menu, with complimentary wine and beer. Join us for Darwin's birthday: a natural selection for a quirky, romantic evening. *Friday, February 7, 8:30 pm –midnight, 21 and over. Complimentary wine, beer, and dessert, \$40 in advance/\$55 at the door if available. Buy tickets online at www.calacademy.org. For information call (415) 750-7281. (All proceeds benefit research and education.)*



Run to the Far Side 2002

The glorious fall weather on Sunday, December 1 brought out over 10,000 participants to the Academy's XVIII annual Run To The Far Side® 5k and 10k fun run. KRON-4 TV's Doug McConnell served as Grand Marshall for the Gary Larson-themed costume judging. The Academy is grateful to its major sponsors, Alice@97.3 Radio, Blue Cross of California, KRON-4 TV, and the San Francisco Chronicle. We also acknowledge with thanks, Andronico's Market, Aquafina, Biscotti di Suzy, Galletta Lines, Glen Oaks Yogurt, Heartland Soups, Joie de Vivre Hotels, MetroPCS, Monster.com, SFGate.com, Starbucks, Southwest Airlines, and SuperShuttle. Proceeds benefit the Academy's programs in research and education.

Lakeside Foundation Gift

The Academy is delighted to report a generous gift of \$50,000 from the Lakeside Foundation to support general operations. The Lakeside Foundation has a long relationship with the Academy, and has supported many projects in research, education, and exhibits.

New Donor Circle Members

September through October 2002: \$125 to \$999

Many thanks to the following new donors and those who have increased their support of the Academy in the last few months.

Ms. Gayle A. Anderson	Mr. and Mrs. Scott Kaplan
Ms. Carol Arnold and	Mr. David Klein
Mr. Andrew Moore	Ms. Rebecca Krisman and
Dr. and Mrs. Ralph Benard	Mr. Gareth Evans
Mr. David Benzing	Mr. and Mrs. Al Lilleberg
Mr. and Mrs. Jeff Bohn	Mr. Paul J. Livingston
Mr. James M. Bullock	Mr. and Mrs. Edwin R.
Ms. Audrey W. Chan	MacKethan
Mrs. Denise Collier	Mr. Patrick F. McBride
Mr. Fred J. Dal Broi	Drs. Kate and Andrew Mecca
Mr. David L. Davies and	Mr. Jahan Raissi and
Mr. John D. Weeden	Ms. Kathy Raissi
Mr. and Mrs. Joel Dobris	Ms. Sandra Remus
Ms. Wendy Fitzsimmons	Ms. Rebecca Roberts and
Mr. E.P. Flemng and	Mr. Dan Hartman
Ms. Lorina Poland	Mr. Allen Rudolph and
Mr. and Mrs. Theodore Goldin	Ms. Pam Rudolph
Mr. and Mrs. Jeffery Griffith	Mr. Richard Simpson
Mr. and Mrs. Ralph J.	Ms. Susan Stoddard
Guggenheim	Dr. and Mrs. John Teerlink
Ms. Susan Hendrie-Marais and	Mr. and Mrs. William Weintraub
Mr. Laurentius Marais	Mr. and Mrs. Raymond Yep
Mr. and Mrs. Peter M. Joost	Mr. Howard Zee
Mr. and Mrs. Aaron Jordan	Mr. and Mrs. Joseph Zukin, Jr.

ACADEMY (ISSN 15312224) is published bimonthly by the California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. Telephone (415) 750-7487, Fax (415) 750-7346. Periodicals Postage Paid San Francisco, California.

POSTMASTER: Send address changes to Academy, Membership Department, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118.

MEMBER INFORMATION

Guided Tours: Free one-hour highlight tours daily

Open 365 days a year.

Regular hours (Labor Day weekend to Memorial Day) 10 am – 5 pm

Summer hours (Memorial Day weekend to Labor Day) 9 am – 6 pm

Information Hotline: (415) 750-7145

Web site: www.calacademy.org

email: info@calacademy.org

For information during the weekend: (415) 750-7375

Special Lectures: (415) 750-7128

Membership: (415) 750-7111

Library: (415) 750-7102

Education: (415) 750-7100

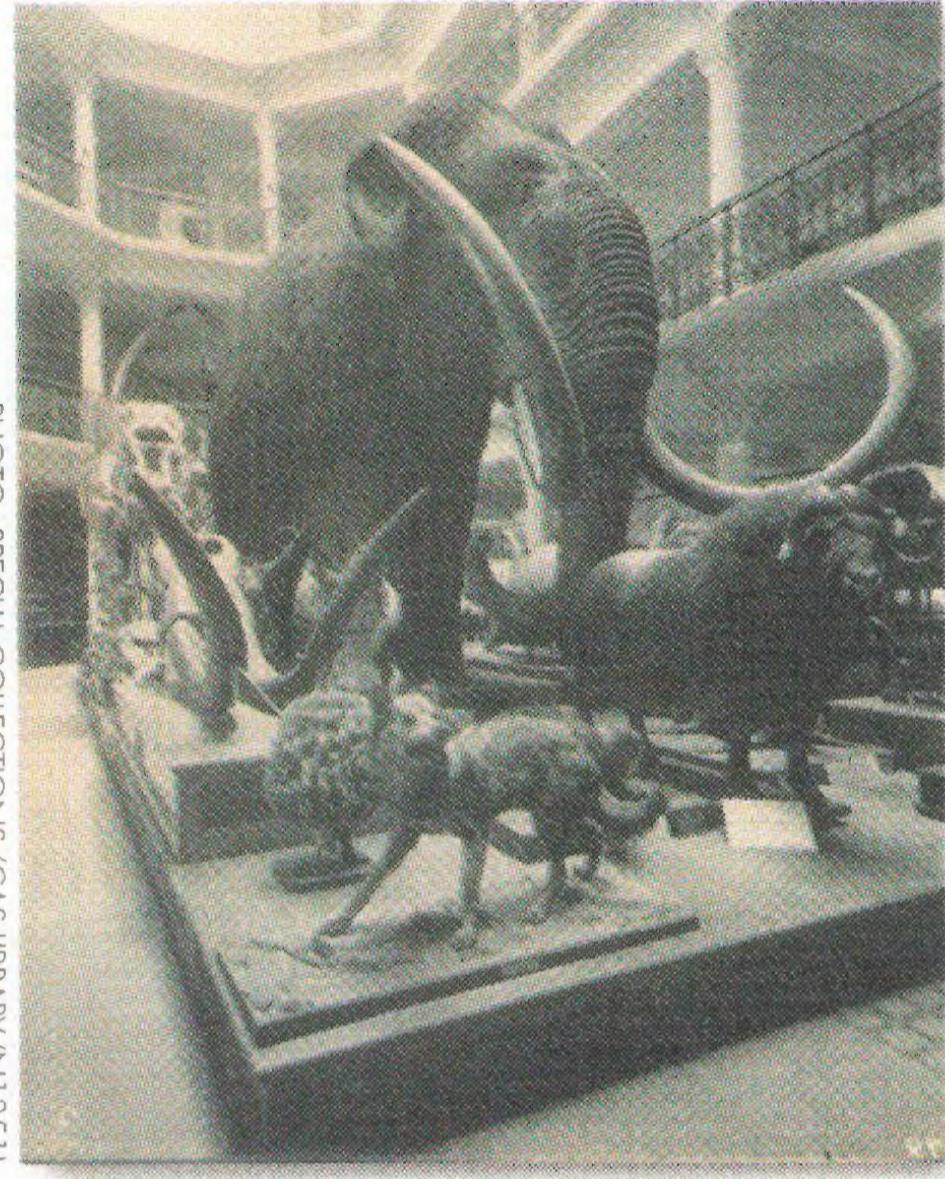


PHOTO: SPECIAL COLLECTIONS/CAS LIBRARY [N11351]

150 Years of Science

Through December 31, 2003

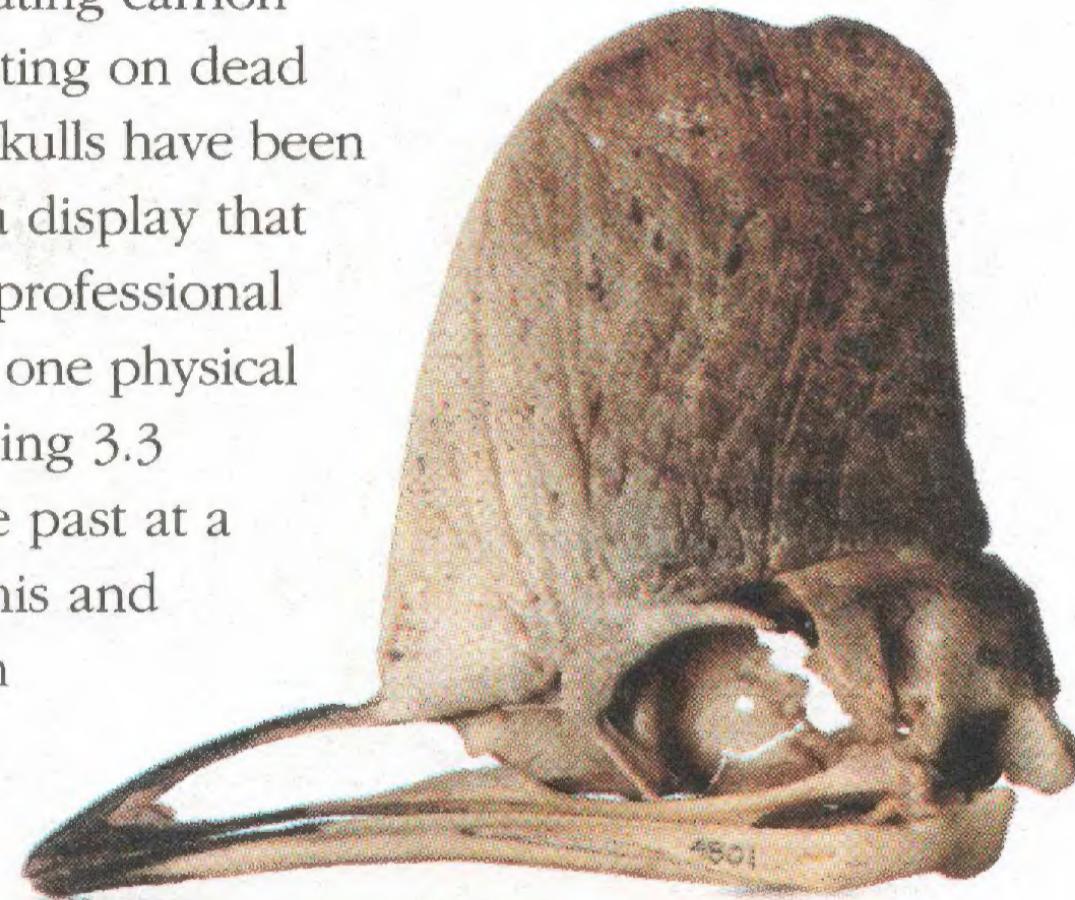
The Academy's 150th Anniversary Exhibit: **150 Years of Science: Exploring Nature's Wonders** features an enormous timeline streaming through the Academy's exhibit halls, giving visitors the opportunity to walk through 150 years of history as they learn how world events and major discoveries have shaped the pursuit of science and the Academy. The timeline will lead visitors to further exhibits that detail the Academy's plans for its future.

The old Academy museum on Market Street, before it was destroyed in 1906. The Woolly Mammoth was part of a gift from Charles Crocker and Leland Stanford.

Skulls

December 31, 2003

Thousands of flesh-eating carrion beetles are busy feasting on dead heads. 860 sea lion skulls have been put into position for a display that runs the length of a professional basketball court. And one physical anthropologist is gazing 3.3 million years into the past at a single monkey. All this and more is on display in **skulls**, an exhibit featuring over 1,700 diverse dead heads, representing animals that range from ancient squirrels to modern mice, and from hawks to humans.



PHOTOS: DAVID LIITSCHWAGER ©2002

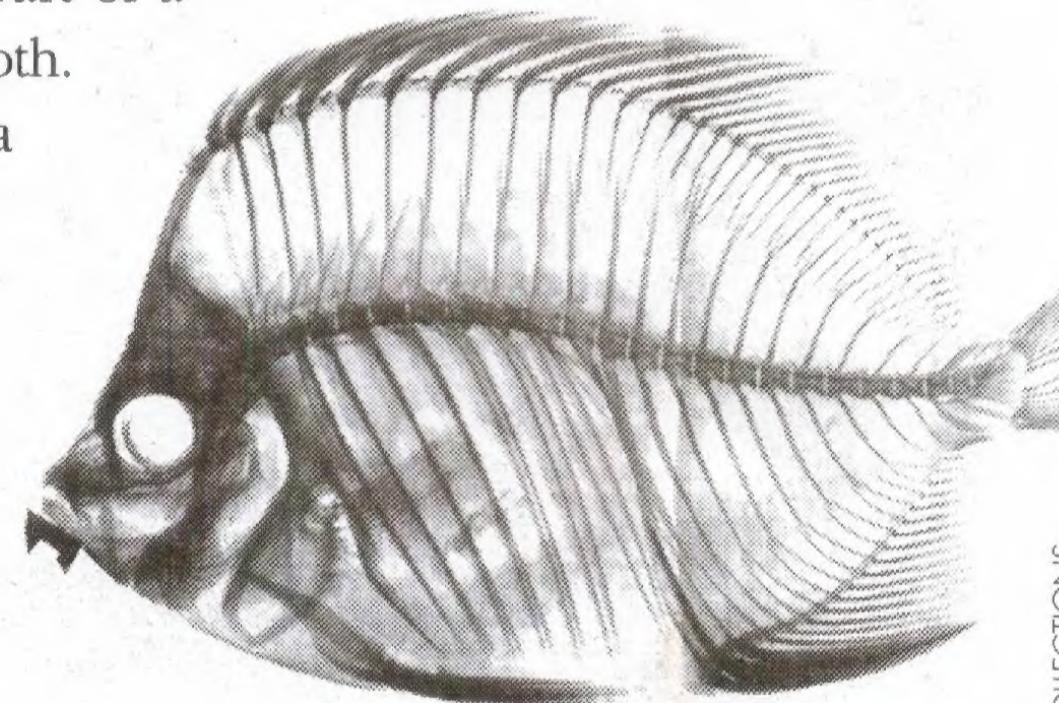
X-Ray Ichthyology

Ongoing

Are they works of art or part of a serious scientific study? Both.

Prepare to look at fish in a whole new light. **X-Ray Ichthyology** captures 46 fish from the Academy's ichthyology collection on X-ray film.

Academy scientists originally prepared these X-rays for scientific purposes but quickly saw their artistic value and wanted to share them with the public. Blown up and backlit, these large-format photographs transform scaly swimmers ranging from piranhas to guitarfish into eerie, luminescent works of art.



Chaetodon daedalma—a work of art, a scientific specimen, or both? You decide in X-Ray Ichthyology.

CALIFORNIA ACADEMY OF SCIENCES
GOLDEN GATE PARK
STEINHART AQUARIUM • NATURAL HISTORY MUSEUM • MORRISON PLANETARIUM
EDUCATION • RESEARCH

The Academy encourages the use of public transportation.